

28318 - Soil Geography

Información del Plan Docente

Academic Year	2016/17
Academic center	103 - Facultad de Filosofía y Letras
Degree	419 - Degree in Geography and Land Management
ECTS	6.0
Course	2
Period	Second semester
Subject Type	Basic Education
Module	---

1. Basic info

1.1. Recommendations to take this course

1.2. Activities and key dates for the course

2. Initiation

2.1. Learning outcomes that define the subject

2.2. Introduction

3. Context and competences

3.1. Goals

3.2. Context and meaning of the subject in the degree

3.3. Competences

3.4. Importance of learning outcomes

4. Evaluation

5. Activities and resources

5.1. General methodological presentation

The learning and teaching methodology developed in the course is based on the following:

The course on Soil Geography is considered of basic training and is aimed to identify, interpret and analyse the soil system as a major element of the physical environment. To this aim, to provide students with a fundamental theoretical framework is key, and participatory lecture sessions are the most suitable vehicle of transmission.

Moreover, as appropriate for environmental-related knowledge, special attention is paid to field work, and specific

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practical work is performed in the laboratory. Field work is aimed at describing and sampling soils and relating them with other elements of the landscape. Laboratory activities focus on analytical features with special interest in land evaluation and the assessment of soil degradation.

In addition, an individual activity of synthesis of information is proposed to the student, who, on the basis of the information collected during the practical activities, must create a preliminary map or sketch of the distribution of the main soil types in a certain study area. To do this, the student will rely on the relationship between the distribution of soils and of other elements of the physical environment (e.g., vegetation, relief), which are addressed at the same time during the same semester and academic year within the course on "Physical Geography Applied on Land Planning I: the Relief and the Living Beings". Through this activity, the student will test this/her capacity of processing and interpreting information concerning different elements of the physical environment, and his/her mastery of the basics concepts and terms in Soil Science by applying the subject matter to a real-life context.

5.2.Learning activities

In order to attain the objectives of the course, the following activities will take place:

- Lecture sessions: 36 hours
- Interactive activities: 9 hours. The interactive sessions will concentrate on discussing and solving practical case studies of soil classification and evaluation.
- Laboratory sessions: 5 hours. The laboratory work includes the following activities: Preparation of soil samples. Determination of the soil color, pH, carbonate, texture (densitometric and field methods), organic matter, salinity and aggregate stability.
- Field work: 10 hours. The field work will be conducted in sites with marked soil diversity, and will allow the students to study *in situ* a variety of forming factors and the soils resulting from them, and to practice soil morphological description and collection of soil samples.
- Directed activities. Each student will perform a personal work on the soils studied during the practical activities of the course. This work will include: a short dissertation on the soil forming factors and processes occurring in a certain study area; a description and a preliminary map or sketch of the main soil types in the area; the presentation and interpretation of a soil profile representative of the area and studied during the field and laboratory work. The teacher will guide the students' work, check the activity's progress and evaluate the student's mastery of the subject matter involved in the activity, through on-line and/or scheduled face-to-face tutorials. The work will be finally delivered in paper and digital format at the end of the course.

5.3.Program

The lecture course will address the following main issues:

1. Soil Geography and Soil Science: definition and aims
2. How do we study soils?
3. Components of the soil gaseous and aqueous phases: Water and air in the soil
4. Components of the soil solid phase: minerals and organic matter
5. Physical properties of the soil
6. Chemical properties of the soil
7. Ecological factors of soil formation
8. Soil forming processes
9. Soil classification
10. Major soil types of Europe and the world
11. Soil information: maps and soil information systems
12. Soil evaluation
13. Soil degradation and conservation

5.4.Planning and scheduling

The course is divided into 4 thematic blocks. The first block (Lessons 1-2) serves as an introduction to the subject and

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runs during the first 2 weeks of the term. The second thematic block includes the topics of soil components and properties (Lessons 3-6) and runs during the following 4 weeks. The third block covers the lessons on soil genesis and diversity (Lessons 7-10); it develops during the following 10 weeks. The final block (Lessons 11-13) includes the topics on soil evaluation and conservation, and runs during the final 2 weeks of the course. Interactive activities of soil classification and evaluation will develop simultaneously to the lecture sessions during the final 5 weeks of the semester.

For details concerning the timetable and classroom please refer to the "Facultad de Filosofía y Letras" web site (<https://fyl.unizar.es/horario-de-clases#overlay-context=horario-de-clases>). For details concerning the examination schedule, please refer to the "Facultad de Filosofía y Letras" web site (<https://fyl.unizar.es/calendario-de-examenes>). Individual works will be delivered at the same date, time and place of the final test.

5.5. Bibliography and recommended resources

Basic bibliography

- Ferreras Chasco, Casildo. Biogeografía y edafogeografía / C. Ferreras Chasco, C. Fidalgo Hijano . - [3 th reprint.] Madrid : Sintesis, D.L. 1991 (reimp. 2009)
- Porta Casanellas, Jaime. Introducción a la edafología : uso y protección del suelo / Jaime Porta Casanellas, Marta López-Acevedo Reguerín, Rosa M. Poch Claret Madrid, [etc.] : Mundi-Prensa, 2008
- Porta Casanellas, Jaime. Edafología para la agricultura y el medio ambiente / Jaime Porta Casanellas, Marta López-Acevedo Reguerín, Carlos Roquero de Laburu . - 3th ed., rev. and exp. Madrid [etc.] : Mundi-Prensa, 2003

Recommended bibliography

- Porta Casanellas, Jaime. Agenda de campo de suelos : información de suelos para la agricultura y el medio ambiente / Jaime Porta Casanellas, Marta López-Acevedo Reguerín Madrid : Mundi-Prensa, 2005
- Itinerarios edáficos por el Alto Aragón / David Badía Villas (coord.) ; José Antonio Cuchi... [et al.] Huesca : Instituto de Estudios Altoaragoneses, D.L. 200
- Soil Atlas of Europe / European Commission; European Soil Bureau Network Luxembourg : European commission, 2005